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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CARLOS J. GONZALEZ and ANDREW TOMLIN

Appeal 2008-3659[1]
Application 10/751,033
Technology Center 2100

Decided: January 15, 2009

Before JAMES D. THOMAS, JEAN R. HOMERE, and STEPHEN C. SIU, *Administrative Patent Judges*.

HOMERE, *Administrative Patent Judge*.

DECISION ON APPEAL

I. STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from a final rejection of claims 1 through 4, 10, 17, 18, 20, and 23. Claims 21, 22, and 25 through 27

[1] Filed December 31, 2003. The real party in interest is SanDisk Corp.

have been allowed. Claims 5 through 9, 11 through 16, 19, and 24 have been deemed to be allowable if rewritten in independent form to include the limitations of their respective base claims and any other intervening claims. We have jurisdiction under 35 U.S.C. § 6(b). We reverse.

Appellants' Invention

As depicted in Figure 1, Appellants invented a method and system for screening a copy of firmware code transferred from a flash memory (13) into a random access memory (RAM) (21) during the initialization of a computer system. (Spec. 10.)

Illustrative Claim

Independent claim 1 further illustrates the invention. It reads as follows:

1. A method of initiating a memory storage system having flash memory containing at least first and second copies of firmware code stored in different locations therein, a microprocessor, a read-only-memory (ROM) containing microprocessor accessible boot code and a random-access-memory (RAM) for storing microprocessor accessible firmware code, the method comprising:

executing the boot code to transfer a first copy of the firmware from the flash memory to the RAM,

identifying any bit errors in the transferred first copy of the firmware code,

if bit errors are identified that are correctable, correcting the erroneous bits,

if bit errors are identified that are not correctable, reading at least a portion of the second copy of the firmware code into the RAM in place of at least a portion of the first copy containing the uncorrectable bit errors, and

executing an error free copy of the firmware code from the RAM.

Prior Art Relied Upon

The Examiner relies on the following prior art as evidence of unpatentability:

Smith	US 2004/0088534 A1	May 6, 2004 (filed Oct. 31, 2002)
Langford	US 2004/0205328 A1	Oct. 14, 2004 (filed Apr. 10, 2003)

Rejection on Appeal

The Examiner rejected the claims on appeal as follows:

Claims 1 through 4, 10, 17, 18, 20, and 23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Langford and Smith.

Appellants' Contentions

Appellants contend that the combination of Langford and Smith does not render the claimed invention unpatentable. Particularly, Appellants contend that while the cited combination teaches or suggests loading a boot code from the Flash memory to the RAM before checking for errors in the

firmware code, it does not load the firmware code into the RAM until after verifying that it is error free. (App. Br. 7-8, Reply Br. 1-3.)[2]

Examiner's Findings

The Examiner finds that Langsford's disclosure of loading the boot code into the RAM from the flash memory before verifying the validity of each microcode image in the flash memory teaches identifying bit errors in a transferred copy of the firmware code, as recited in independent claim 1.

II. ISSUE

Have Appellants shown that the Examiner erred in concluding that the combination of Langford and Smith renders claim 1 unpatentable? Particularly, the issue turns on whether the cited combination teaches or suggests identifying a bit error in a firmware code transferred from a flash memory into a RAM.

III. FINDINGS OF FACT

The following Findings of Fact (FF) are shown by a preponderance of the evidence.

[2] Appellants acknowledge that they inconsistently used the terms microcode (firmware code) and boot code in their earlier briefs/replies to explain the operation of the Langford reference. However, in the Reply Brief, they have rectified all confusion regarding the proper use of such terms.

Langford

1. As shown in Figures 2-3, Langford discloses, during the initialization of a computer system (200), loading a boot code (300) from a flash memory (220) into a RAM (221). (P. 3, para. [0025].)

2. The boot code (300) is executed in the RAM to instruct the boot code (304, 314) in the flash memory (220) to check the validity flag (320, 322) of each firmware code (308, 316) in the flash memory. If the validity flag indicates that a corresponding firmware code (308, 310, 316, 318) is valid (i.e. it has no error), the boot code (304, 314) transfers the valid firmware code from the flash memory into the RAM. (P. 3, para. [0027].)

3. If the validity flag indicates that the corresponding firmware code is invalid, the boot code corrects it if possible. (P. 1, para. [0006].)

4. If correction is not possible, the boot code skips it and moves on to check another firmware code for transfer into the RAM. (P. 3, para. [0028.])

Smith

5. Smith teaches a method and system for reconfiguring the BIOS of a computing system by updating it to reflect a desired customization level. Particularly, Smith discloses customizing a BIOS code copy by updating checksums or error correction codes associated with the contents of a BIOS code copy. (P. 4, para. [0047].)

IV. PRINCIPLES OF LAW

Appellants have the burden on appeal to the Board to demonstrate error in the Examiner's position. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) ("On appeal to the Board, an applicant can overcome a rejection [under § 103] by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.") (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

V. ANALYSIS

Independent claim 1 requires in relevant part identifying bit errors in a firmware code transferred from a flash memory into a RAM. As set forth in the Findings of Facts section, Langford discloses, during the initialization of a processor, loading a boot code in a RAM to trigger the verification of the validity flag of a firmware code in a flash memory before transferring the firmware code into a RAM. Particularly, Langford teaches transferring the firmware code into the RAM only if it is first found to be valid. (FF. 1-4.) We agree with Appellants that Langford's teaching is limited to checking for errors in the firmware code in the flash prior to transferring it into the RAM. The Examiner appears to have mistakenly equated Langford's initial loading of the *boot code* into the RAM for the claimed limitation of transferring the *firmware code* into the RAM. Like in Appellants' earlier Briefs, the

Examiner appears to confuse Langford's boot code with the firmware code.[3] We further agree with Appellants that Smith does not cure these deficiencies of Langford noted above. It therefore, follows that Appellants have shown that the Examiner erred in concluding that the combination of Langford and Smith renders independent claims 1 through 4, 10, 17, 18, 20, and 23 unpatentable.

CONCLUSION OF LAW

Appellants have established that the Examiner erred in rejecting claims 1 through 4, 10, 17, 18, 20, and 23 as being unpatentable under 35 U.S.C. § 103(a).

DECISION

We reverse the Examiner's rejection of claims 1 through 4, 10, 17, 18, 20, and 23.

REVERSED

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[3] See supra note 2.